

A MIGRATION OF *VANESSA KERSHAWI* (McCOY) (LEPIDOPTERA: NYMPHALIDAE) IN TASMANIA

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The winter of 1975 in Hobart was unusually long, with above normal rainfall. During the latter part I saw a few examples of *Vanessa kershawi* (McCoy) flying through the University of Tasmania campus on occasional sunny days. On October 5th, 4 worn, somewhat faded specimens were taken and on October 11th 3 very worn and faded individuals were collected, while *Precis villida calybe* (Godart) in contrast was common and fresh.

Migration observations

16th November, 1975

By November 16th (max. °C = 16.8 and clear) the *P. villida* had become rare and worn, but *V. kershawi* was very common and mostly fresh (30 taken: a few expelled meconium). An estimated several hundred were seen, flying through and feeding on flowers all day. They appeared to be migrating NW by compass in the morning, changing to more due N by mid afternoon. [Mr Tony Ellis (pers. commun.) said there had been swarms of them ("thousands") in a 20 hectare clearing at Mossy Marsh near Tarraleah, NW of Hobart, on that same date, an area of button grass and some thistles. He thought they must have migrated in. Earlier, on November 11th, he had only seen one *kershawi* in the same area! On December 6th I saw only a very few migrating c. N at Tarraleah in the pm.]

29-30th November, 1975

Following a 9 day rainy spell, the weekend of November 29-30th was warm (max. °C = 23.6, 22.7) and clear with occasional breezes at Hobart, and more detailed observations were made. I counted 13 from 7:42-8:42 am and 19 from 9:15-10:15 am (Australian Eastern Standard Time used throughout) that passed NW across a 15 m stretch of dirt road through the open bush behind the medical building (i.e. 1 / 3-5 min. / 15 m). Many appeared fair to worn, with some in fresh condition. These arrived in irregular "waves" separated by "absences" (the latter apparently corresponding to feeding and basking periods). [They began to bask in the sun at 6:00 am and did not begin migrating until 7:40 am. Five were seen feeding and basking between 7:44-8:07 am.] From 10:00 am to at least 2:00 pm the predominant behaviour was flower-feeding although a few still migrated. [At 11:15 and 11:25 am, two females oviposited on two different species of weedy yellow composites; one female laid 4 eggs.] From 1:00-2:00 pm only about 6 were seen, these flying NW-N, occasionally WSW. They seemed to readily swerve from their directional flight, unlike those of the morning flight. In the afternoon the direction shifted to due N but with some still going NW, with fewer individuals noticed. By 4:00 pm adults began

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semi-territorial behaviour for brief periods, and by 4:30 pm no more migration was noted and territoriality (with "chases") was predominant. By 5:30 pm the migrants were very territorial in fairly permanent spots along the road (5 or 6 seen) continuing until 6:15 pm when the area went into shadow. These alighted with wings flat and perpendicular to the sun's rays. At 6:03 and 6:20 pm, two alighted, repeatedly hovered and alighted on the lowest leaves of two small eucalyptus in shadow before finally settling there with wings shut for the night. Numbers decreased from the November 16th date.

General comments and discussion

On both dates the migrants flew about 1-2 m above the ground and in a leisurely pace. Specimens seemed unusually docile, did not frighten readily and were easy to net.

The December 1974 to November 1975 monthly weather summary from the Bureau of Meteorology, Hobart, is as follows:

	Temperature (°C)		Sunshine hrs/day	Rainfall mm
	max.	min.		
mean	17.1	8.9	5.7	72.5
normal*	16.7	8.0	5.8	52.3

* Normal is the average of 133 years for temperature and 92 years for rainfall.

Thus, mean maximum temperatures were above normal on 8 months, minimum temperatures were above normal for every month. Above normal rainfall occurred during 8 months (totals = 870 mm for 1975, 627 mm normal or a 38.7% increase). Smithers (1969) states that years of heavy rainfall are likely to coincide with big migrations of *kershawii*.

A peculiar aspect of this migration was its NW (mainly) to N direction. Smithers (1969) notes only one instance of *kershawii* going NW (5 individuals) and this was "at a time of exceptionally strong southerly winds". All other Australian reports are for S or SW directions, with a few tending more westward. On the other hand, in the northern hemisphere the close relative *Vanessa cardui* (Linnaeus) normally migrates NW (mainly) to N (Shields, 1974). The shift in the Hobart *kershawii* migration from NW to more N from morning to afternoon coincides with the change in the plane of polarized light as determined on a Polaroid sheet: i.e. 8-10 am, NW (-SE); noon, WSW (-ENE); 2 pm, NNE (-SSW); 3 pm, due N (-S).

As of this writing (7.xii.75), a few are still migrating.

References

- Shields, O., 1974. Towards a theory of butterfly migration. *J. Res. Lepid.* 13: 21-31.
 Smithers, C. N., 1969. A note on migrations of *Vanessa kershawii* (McCoy) (Lepidoptera: Nymphalidae) in Australia, 1963-1968. *Aust. Zool.* 15: 188-194.